ABSTRACT

A heterogeneous catalyst includes a solid support having deposited thereon a catalytically active material, which is substantially insoluble in organic and aqueous liquid media. The insoluble material is constructed from secondary building blocks derived from suitable organometallic active components, and the organometallic active component may be molecularly modified so as to introduce two or more anionic functional groups. These molecularly modified organometallic components, upon interaction with salts of Ca^{2+}, Sr^{2+} and Ba^{2+}, provide the practically insoluble solid material. Methods of formulating the organometallic active materials on a solid support as a solid catalyst are also provided. The catalysts are capable of catalyzing diverse reactions in polar and nonpolar reaction media, and the overall integrity of the formulation as a solid material in a liquid phase provides easy catalyst and product separation.